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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,629	02/05/2004	Ranganathan Krishnan	040250	8348

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QUALCOMM INCORPORATED
5775 MOREHOUSE DR.
SAN DIEGO, CA 92121

EXAMINER

LEE, JOHN J

ART UNIT	PAPER NUMBER
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2618

DATE MAILED: 08/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/773,629	Applicant(s) KRISHNAN ET AL.	
	Examiner JOHN J. LEE	Art Unit 2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/23/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1 – 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki (US 6,788,138) in view of Hayashi (US 6,697,634).

Regarding **claims 1 and 8**, Suzuki discloses that a method of power control (column 2, lines 25 – 51 and Fig. 1). Suzuki teaches that determining whether a wide-band (power control use for any band including wide-band) interference (error from transmission power designate value, negative fed-back of detection voltage) is above or below a threshold (Fig. 4, 10 and column 7, lines 15 – column 8, lines 41, where teaches detecting negative fed-back of detection voltage is lower or higher than threshold). Suzuki teaches that enabling closed-loop power control in response to determining a wide-band interference above a threshold (Fig. 4, 10 and column 7, lines 15 – column 8, lines 41, where teaches in the graph in Fig. 4, enabling closed-loop power control in response to determining in the detection value above a threshold). Suzuki teaches that disabling closed-loop power control in response to determining the wide-band interference is below the threshold (Fig. 4, 10 and column 7, lines 15 – column 8, lines 41, where teaches in the graph in Fig. 4, enabling open-loop power control in response to determining in the detection value below a threshold means disabling the closed-loop

power control in response to determining in the detection value below a threshold).

Suzuki teaches that sending a power feedback signal indicating a power transmission level if the closed-loop power control is enabled (Fig. 4, 10, column 8, lines 61 – column 9, lines 20, and column 7, lines 15 – column 8, lines 41, where teaches as closed loop power control is enable, transmitting a power feedback signal indicating a power level such that setting at L or H level).

Suzuki does not exactly disclose the limitation “determining a wide-band interference”. However, Hayashi discloses the limitation “determining a wide-band interference” (claim 1, lines 15 - 62, Fig. 4, 6, and column 3, lines 17 – column 4, lines 41, where teaches in CDMA systems (transmission power control based on wide-band interference and inherently using the wide-band in current wireless CDMA system), measurement section measures an signal interference ratio, the ratio of level of the reception signal from amplifier section to the level of the desired signal from correlation calculation demodulation section). It would have been obvious to one having ordinary skill in the art at the time the invention was to modify the Suzuki as taught by Hayashi, provide the motivation to enhance a transmission power control technique for reducing the interference in wireless CDMA system.

Regarding **claims 2 and 9**, Suzuki discloses that disabling open-loop power control in response to determining a wide-band interference above the threshold (Fig. 4, 10 and column 7, lines 15 – column 8, lines 41, where teaches in the graph in Fig. 4, enabling closed-loop power control in response to determining in the detection value above a threshold means disabling the open loop power control in response to

determining in the detection value above a threshold). Suzuki discloses that enabling open-loop power control in response to determining the wide-band interference is below the threshold (Fig. 4, 10 and column 7, lines 15 – column 8, lines 41, where teaches in the graph in Fig. 4, enabling open-loop power control in response to determining in the detection value below a threshold means disabling the closed-loop power control in response to determining in the detection value below a threshold).

Regarding **claim 3**, Suzuki discloses that the power feedback signal is a power-up command indicating an increase in power transmission level (column 11, lines 19 – 40, Fig. 9, 12, and column 12, lines 18 – 40, where teaches adjusting the detection power feedback signal ratio to increase or decrease by power command).

Regarding **claim 4**, Suzuki discloses that the power feedback signal is a power-down command indicating a decrease in power transmission level (column 11, lines 19 – 40, Fig. 9, 12, and column 12, lines 18 – 40, where teaches adjusting the detection power feedback signal ratio to increase or decrease by power command).

Regarding **claims 5, 10, 14, and 18**, Suzuki discloses that the power feedback signal is a power-up command if a quality parameter is less than a target quality parameter (column 18, lines 36 – column 19, lines 7 and Fig. 19, where teaches if the power level is below the threshold, the power feedback signal is a power increase command).

Regarding **claims 6, 11, 15, and 19**, Suzuki discloses that the power feedback signal is a power-down command if a quality parameter is greater than a target quality parameter (column 18, lines 36 – column 19, lines 7 and Fig. 19, where teaches if the

power level is above the target threshold, the power feedback signal is a power decrease command).

Regarding **claim 7**, Suzuki and Hayashi discloses all the limitation, as discussed in claim 1.

Regarding **claim 12**, Suzuki and Hayashi discloses all the limitation, as discussed in claim 1. Furthermore, Suzuki further discloses that a baseband processor (8 in Fig. 8) configured to enable closed-loop power control in response to detecting the wide-band interference, the baseband processor coupled to the receiver (column 2, lines 25 – 51, Fig. 8, 10, and column 7, lines 15 – column 8, lines 41, where teaches in the graph in Fig. 4, the controller enables closed-loop power control in response to determining in the detection value above a threshold). Suzuki further discloses that a transmitter coupled to the baseband processor (Fig. 8 and column 10, lines 43 – column 11, lines 8).

Regarding **claim 13**, Suzuki and Hayashi discloses all the limitation, as discussed in claims 1 and 12.

Regarding **claim 16**, Suzuki and Hayashi discloses all the limitation, as discussed in claims 1 and 12.

Regarding **claim 17**, Suzuki and Hayashi discloses all the limitation, as discussed in claims 1 and 12.

3. **Claims 20 – 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki in view of Nicholls et al. (US 2004/0062216).

Regarding **claims 20 and 21**, Suzuki and Hayashi disclose all the limitation, as discussed in claims 1 and 12. Furthermore, Suzuki discloses that detecting an interferer (error from transmission power designate value, negative fed-back of detection voltage) (Fig. 4, 10 and column 7, lines 15 – column 8, lines 41, where teaches detecting circuit detects the power with interference). Suzuki discloses that enabling close-loop power if a wide-band interferer is determined (Fig. 4, 10 and column 11, lines 19 – column 12, lines 51, where teaches controlling the power for open-loop or closed loop control based on feedback ratio transition section (power with interference (narrowband or wideband) ratio and information for quality, strength).

Suzuki does not specifically disclose the limitation “determining whether is a narrow-band or a wide-band interferer, if an interferer is detected and filtering if a narrow-band interferer is determined”. However, Nicholls discloses the limitation “determining whether is a narrow-band or a wide-band interferer, if an interferer is detected and filtering if a narrow-band interferer is determined” (column pages 2, paragraphs 14 – 20 and Fig. 1, 2, where teaches a power detector for determining power of IF signal having a narrow bandwidth, the control circuit being responsive to the determined power of the IF signal, relative to a determined power of the wide-band RF signal and scaled in accordance with the wideband and narrowband bandwidth of the signals, to detect narrowband interference, and if narrowband interference detected, removed by filtering the notch filter). It would have been obvious to one having ordinary skill in the art at the time the invention was to modify the Suzuki as taught by Nicholls,

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provide the motivation to enhance controlling and detecting power with interference by filtering for reducing the interference of received signal in wireless CDMA system.

Regarding **claim 22**, Suzuki and Nicholls disclose all the limitation, as discussed in claims 1 and 20. Furthermore, Suzuki discloses that disabling closed-loop power control and enabling open-loop power control, if an interferer is not detected (Fig. 4, 10 and column 11, lines 19 – column 12, lines 51, where teaches controlling the power for open-loop or closed loop control based on feedback ratio transition section (power with interference (narrowband or wideband) ratio and information for quality, strength), and lower than prescribed level of feedback ratio, performing open loop power control).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Parssinen et al. (US 6,647,273) discloses Reducing Power Consumption in Transceivers in Wireless Communications Systems Having a Power Control Loop.

Information regarding...Patent Application Information Retrieval (PAIR) system... at 866-217-9197 (toll-free)."

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231
Or P.O. Box 1450
Alexandria VA 22313

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or faxed (571) 273-8300, (for formal communications intended for entry)

Or: (703) 308-6606 (for informal or draft communications, please label "PROPOSED" or "DRAFT").

Hand-delivered responses should be brought to USPTO Headquarters, Alexandria, VA.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John J. Lee** whose telephone number is **(571) 272-7880**. He can normally be reached Monday-Thursday and alternate Fridays from 8:30am-5:00 pm. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, **Edward Urban**, can be reached on **(571) 272-7899**. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.

J.L
July 25, 2006

John J Lee


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